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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Cuong H. Tran

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Meyertons, Hood, Kivlin, Kowert, Goetzel/Symantec

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EXAMINER

TRUONG, CAMQUY

ART UNIT

PAPER NUMBER

2195

NOTIFICATION DATE

DELIVERY MODE

09/17/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/663,632	Applicant(s) TRAN, CUONG H.	
	Examiner CAMQUY TRUONG	Art Unit 2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-29 are presented for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **As to claims 1, 3-11, 13-22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olmstead et al. (2004 /0049573) in view of Vessey et al. (2003/0037178) and further in view of Novaes et al. (7325046).**

4. As to claim 1, Olmstead teaches the invention as claimed including computer accessible medium encoded with instructions which, when executed:

the checkpoint segment is stored into the first local storage by an application, and wherein the checkpoint segment comprises a state of the application (allowing the applications to checkpoint their state, and save a copy into their memory along with the current registry settings, paragraph 16); and

wherein the second node is to execute the application (a node in this role receives checkpoint data (application's checkpoint) from the cluster manager that enables it to take over, as the cluster manager, should the original cluster manager fail,

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paragraphs 31/ the data that the manager uses and checkpoints comprises what resources are available on what nodes and what resources are critical and may be switched to another node when the first node fails, paragraph 58).

5. Olmstead does not explicitly teaches replicate a segment from a first local storage of a first node to at least one other node, and load a copy of the segment from the at least one other node into a second local storage of a second node responsive to a request from the second node to load the copy. However, Vessey teaches **replicate a segment from a first local storage of a first node to at least one other node** (the sending entity (partition) builds the message in a buffer in its local memory space in the same manner as would occur if the message were being built to be transferred via a network. The sending entity then copies part, or all, of the message, into its allocated part of shared memory 160 (the shared memory is managed by the OS or partition, paragraph 233), paragraph 237), **and load a copy of the segment from the at least one other node into a second local storage of a second** (the target partition/operating system, copies the message from shared main memory into its own local memory (i.e., its exclusive memory window), paragraph 238).

6. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Olmstead to incorporate the teaching of replicate a segment from a first local storage of a first node to at least one other node, and load a copy of the segment from the at least one other node into a second local

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storage of a second node responsive to a request from the second node to load the copy as taught by Vessey because it allows to the plurality of node to share data storing in the share memory; thereby, improve system's performance.

7. Olmstead and Vessey do not explicitly teach a request from the second node to load the copy. However, Novaes teaches a request from the second node to load the copy (request the outdated copy of the application to load the most updated snapshot, col. 7, lines 37-45).

8. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Olmstead and Vessey to incorporate the teaching of request from the second node to load the copy as taught by Novaes because this allow to load snapshot for recovery process.

9. As to claim 3, Novaes teaches the at least one other node comprises two or more other nodes (each node having one or more processors, col. 3, lines 51-60).

10. As to claim 4, Novaes teaches the request to load the copy is issued by the application executing on the second node (col. 7, lines 38-45).

11. As to claim 5, Novaes teaches the request to load the copy is issued by an agent that monitor the application on behalf of a cluster server (the DSTS system uses a

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dearchive message to retrieve the snapshot from storage and request the outdated copy of the application to load the most updated snapshot, Col. 7, lines 35-45).

12. As to claim 6, Vessey teaches the instructions, when executed, retrieve the copy from one of the at least one other node responsive to the request (retrieve the message, which is copied into local storage, paragraph 260).

13. As to claim 7, Vessey teaches the at least one other node is configured to load the copy into a global storage (The sending entity then copies part, or all, of the message, into its allocated part of shared memory 160 (the shared memory is managed by the OS or partition, paragraph 233), paragraph 237), and wherein the instructions, when executed, retrieve the copy from the global storage responsive to the request (the target partition/operating system, copies the message from shared main memory into its own local memory (i.e., its exclusive memory window, paragraph 238).

14. As to claim 8, Vessey teaches the instructions, when executed; replicate the checkpoint segment by performing at least:

reading the checkpoint segment from the first local storage of the first node (The sending entity then copies part, or all, of the message, into its allocated part of shared memory 160 (the shared memory is managed by the OS or partition, paragraph 233), paragraph 237); and

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transmitting the checkpoint segment to the at least one other node (The sending entity then copies part, or all, of the message, into its allocated part of shared memory 160 (the shared memory is managed by the OS or partition, paragraph 233), paragraph 237).

15. As to claim 9, Novaes teaches the instructions, when executed:

receive a retrieval request in at least one other node (request to load the copy of snapshot, col. 7, lines 38-45); and

transmit the copy to a source of the retrieval request (loading the snapshot, col. 8, lines 3-6).

16. As to claims 10-11, Vessey teaches:

receive the checkpoint segment from the first node in the at least one other node; and store the checkpoint segment in the at least one other node (The sending entity then copies part, or all, of the message, into its allocated part of shared memory 160 (the shared memory is managed by the OS or partition, paragraph 233), paragraph 237).

17. As to claim 13, it is rejected for the same reason as claim 1.

18. As to claim 14, it is rejected for the same reason as claim 3.

19. As to claim 15, it is rejected for the same reason as claim 4.
20. As to claim 16, it is rejected for the same reason as claim 5.
21. As to claim 17, it is rejected for the same reason as claim 6.
22. As to claim 18, it is rejected for the same reason as claim 7.
23. As to claim 19, it is rejected for the same reason as claim 8.
24. As to claim 20, it is rejected for the same reason as claim 9.
25. As to claim 21, it is rejected for the same reason as claim 10.
26. As to claim 22, it is rejected for the same reason as claim 11.
27. As to claim 24, it is rejected for the same reason as claim 1.
28. **As to claims 2, 12, 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olmstead et al. (2004 /0049573) in view of Vessey et al.**

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(2003/0037178) and further in view of Novaes et al. (7325046), as applied to claims 1, 13 and 24 above, and further in view of Lim et al. (U.S. 6,795,966 B1).

29. As to claim 2, Olmstead, Vessey and Novaes do not explicitly teach the checkpoint segment is identified by a checkpoint segment name that is unique within a cluster including the first node and the second node. However, Lim teaches checkpoint segment is identified by a checkpoint segment name that is unique within a cluster including the first node and the second node (the snapshot is implemented including an identifier called an epoch number, col. 2, lines 46).

30. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Olmstead and Vessey and Novaes to incorporate the teaching of checkpoint segment is identified by a checkpoint segment name that is unique within a cluster including the first node and the second node as taught by Lim because this allow to retrieve the checkpoint segment by identifier for recovery process.

31. As to claims 12, 23 and 25, Lim teaches the at least one other node is not capable of executing the application (col. 2, lines 9-12).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

32. As to claims 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olmstead et al. (2004/0049573) in view of Vessey et al. (2003/0037178) and further in view of Novaes et al. (7325046), as applied to claims 1 and 13 above, and further in view of Vert et al. (U.S. 6,360,331).

33. As to claims 26 and 28, Olmstead, Vessey and Novaes do not explicitly teach the application registering the checkpoint segment; and recording a name of the checkpoint segment to access the checkpoint segment for replicating responsive to the registering.

34. However, Vert teaches the application registering the checkpoint segment (The registry checkpoint data is then saved to the cluster quorum device 118.sub.2 as also described above (CpSaveData), col. 12, lines 41-46 / the checkpoint manager 112, via a snapshot mechanism 116, takes a snapshot of the listed subtree data and records the snapshot as data 118.sub.1 -118.sub.m associated with that application 96 (e.g., snapshot data 118.sub.2) on the quorum device 57, col. 10, lines 7-32); and recording a name of the checkpoint segment to access the checkpoint segment for replicating responsive to the registering (the checkpoint manager 112, via a snapshot mechanism

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116, takes a snapshot of the listed subtree data and records the snapshot as data 118.sub.1 -118.sub.m (name) associated with that application 96 (e.g., snapshot data 118.sub.2) on the quorum device 57, col. 10, lines 7-32).

35. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Lim to incorporate the teaching of the application registering the checkpoint segment; and recording a name of the checkpoint segment to access the checkpoint segment for replicating responsive to the registering as taught by Vert because this allow the failover of an application from one server (i.e., machine) to another automatic in response to a software or hardware failure on the first machine by restore the checkpoint in the registry.

36. As to claims 27 and 29, Vert teaches selecting the at least one other node to which the checkpoint segment is to be replicated responsive to the registering (the checkpoint manager 104 may cause the information to be replicated via GLUP or some other communications mechanism to the other systems of the cluster, col. 11, lines 41-52; col.13, lines 48-61).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAMQUY TRUONG whose telephone number is (571)272-3773. The examiner can normally be reached on 9:00am - 5:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng Ai An can be reached on (703)305-9678. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Meng-Ai An/
Supervisory Patent Examiner, Art Unit 2195

Camquy Truong

March 27, 2009